SHENZHEN FITECH CO., LTD.

水溶性助焊剂 FWF 系列—规格书

Water Soluble Solder Sphere Attach Flux

FWF 系列 — FWF-5200

技术部

Technical Department

Technical Data Sheet

水溶性助焊剂 Water Solder Flux

一、 简介 Introduction

FWF-5200 是一款零卤水洗型助焊剂，无飞溅，焊接活性优，在线工作时效长，黏着力好，水清洗性能优良，完全无卤素，适用于高精度、高可靠性微电子封装。

FWF-5100 is a zero-halogen water soluble solder flux, no spatter, good soldering activity, long operating time, good adhesion, good washability, Zero-halogen, suitable for high-precision, high-reliability microelectronics packaging.

二、 产品特性及优势：Features and Advantages

1. 零卤素，完全符合 RoHS 要求。

   Zero-halogen , meet RoHS requirements

2. 焊接活性好，适合 SnAgCu、SnSb、SnBi、SnPb 合金。

   Good soldering activity ， suitable for use with SnAgCu and SnSb、SnBi、SnPb alloy.

3. 水清洗型，无残留物。

   Water cleaning type, no residue.

4. 高黏着力 High tackiness
5. 工作时间长，操作窗口宽，适合倒装、BGA、CSP、蒸镀等工艺。

   Long working hours, wide operating window, suitable for flip chip, BGA,CSP、evaporation and other processes.
6. 粘度不同，可适用不同的封装工艺，如蘸取、点胶、印刷等。

   Different viscosity can be applied to different packaging processes, such as dipping, dispensing, printing, etc.

三、 技术特性：Technical feature

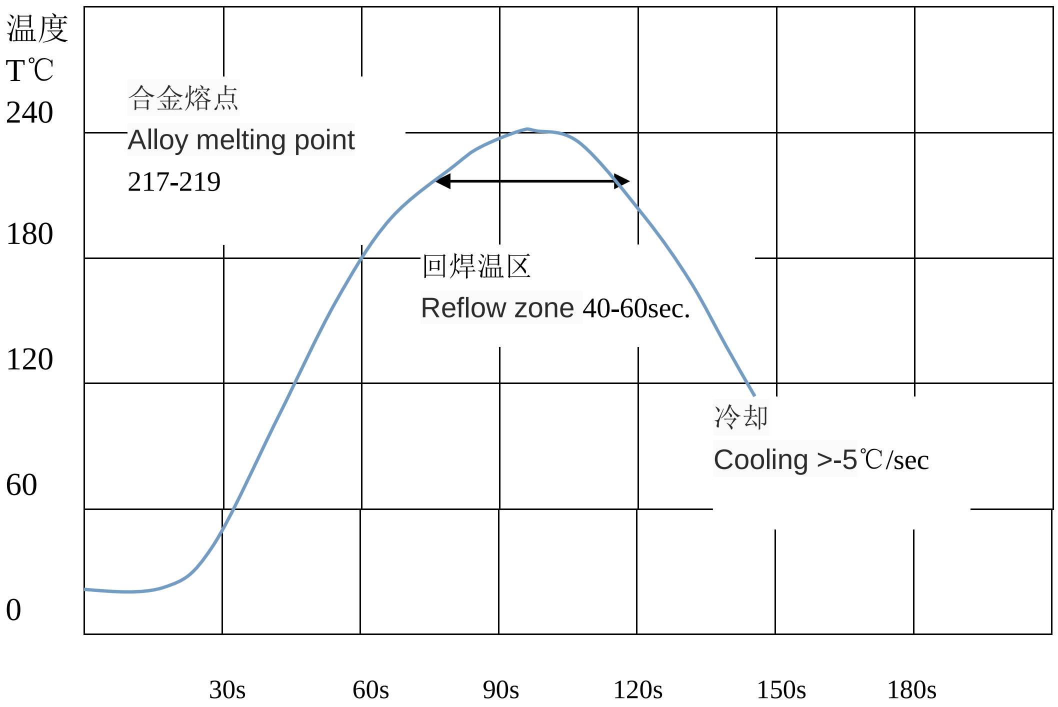
产品性能 Feature	**指标 Result**	**备注 Note**
外观 Appearance	淡黄色至棕色 light yellow to brown	膏状 Paste
应用的工艺方式 Applied process	印刷、点胶、针转移，蘸取等 Printing, Dispensing, Pin transfer, Ball Dip,	可进行调整 Adjustable
结晶度 Crystallinity	<10μm	
酸值 Alloy melting point	60±10	
粘度 Viscosity	FWF-5200D : 20±5 Pa.s FWF-5200：60±10Pa.S FWF-5200P: 100±10 Pa.s	Malcolm (10rpm)
卤素含量 Halogen Cl+Br	ND <100ppm	
ICP 分类	ROM0	
比重 Solder density	1.1	比重瓶
触变指数 Ti	0. 5±0.2	Lg(3rpm/30rpm)
铜镜测试 Bronze mirror test	合格 PASS	IPC-TM-650 2.3.32
铜板腐蚀 Copper corrosion	合格 PASS	JIS Z3197-2012
铬酸银试纸测试 Silver chromate test paper test	合格 PASS	JIS Z3197-2012
表面绝缘电阻 Surface insulation resistance	合格 PASS	JIS Z3197-2012
保质期 Shelf life	6 month@ 0-10℃	密封 Sealed storage

四、 焊接回流工艺：Soldering reflow process

焊盘合金或焊料以 SAC305 合金为例
Soldering & curing process (PAD/alloy SAC305)

- 回流焊接固化:按下图回流曲线加热固化。

Reflow oven ： Heat cure according to the reflow curve as shown below.



① **备注 Note :**

★ 上述温度曲线是指焊点处的实际温度，而非回焊炉的设定加热温度（不同）

The above temperature curve refers to the actual temperature of the solder joint position rather than the welding furnace heating temperature during setting (different).

★ 上述回焊温度曲线，实验室参数仅供参考。建议，使用者根据产品的特性如支架大小、芯片分布状况、设备、生产工艺条件等因素综合评估，结合实际情况调整或设定更合适的炉温线。

The above reflow temperature curve, laboratory parameters are for reference only. It is recommended that users make a comprehensive assessment of factors such as the size of the support, chip distribution, equipment, and production process conditions according to the characteristics of the product, and adjust or set a more appropriate furnace temperature line based on the actual situation.

五、 包装储存 Package and storage

1. 包装 Package□

- 罐装：100g/罐，宽口型塑胶（PE）瓶包装，并盖上内盖密封封装，送货时可用泡沫箱盛装。

  Canned: 100g/bottle, wide-mouth plastic (PE) bottle, sealed with inner lid and packaged in foam box.

- 针管装：针筒 25g/30cc、150g/200cc 包装，可按客户要求进行包装，运输时采用冰袋、泡沫箱+纸箱包装。

  Needle tube: The dispensing syringes are packed in 25g/30cc 、150g/200cc according to customer's requirements. They are packed in ice bags, foam boxes and cartons during transportation.

2. 运输储存 Transport storage

- 运输条件：冰袋冷藏运输Transport**:** Ice pack refrigerated transportation.

- 储存条件：收到后应尽快将其放进冰箱储存，建议储存温度为0-10℃。温度过高会相应缩短其使用寿命，影响其特性。
  Storage：It should be stored in the refrigerator as soon as possible after receipt. The recommended storage temperature is 0-10 ℃. If the temperature is too high, it will shorten its service life and affect its characteristics.

- 有效期限：在0-10℃正常密封储存条件下，有效期为6个月。
  Shelf life：6 months under normal sealed storage conditions of 0-10℃.

- 工作时间：接触空气24小时内进行焊接。
  Work time: Welding within 24 hours of exposure to air.

六、 使用方法：Instructions

- ✓ 回温方式：不开启盖子的前提下，于室温中自然回温；
  Recovery method: don't open the bottle cap until the solder is close to room temperature,

- ✓ 回温时间：室温下回温2~3小时。达到热均衡所需要的实际时间因容器大小而异。
  Recovery time : Generally, paste should be removed from refrigeration 2~3 hours before use. Actual time to reach thermal equilibrium will vary with container size.

- ✓ 注　意：未经充足“回温”，不要打开瓶盖，不可用加热的方式缩短“回温”时间；
  Note: without enough "recovery", DO NOT open the bottle caps. DO NOT try to heat the paste to lower recovery time.

- ✓ 使用环境：水清洗助焊剂最佳使用环境温度为20~25℃，相对湿度40~60%RH。建议在氮气保护环境下进行回流焊。
  Using environment: The best temperature for using the water cleaning solder flux is 20 to 25 ℃, relative humidity 40~60% RH. Suggestions reflow soldering under nitrogen protection.

- ✓ **水清洗：**过回流后在电路板（基板）上有助焊剂残留物需要清洗，建议回流后尽快用去离子水加热至最低温度40~60℃进行清洗，35至65psi的喷雾压力去除所有残留物。
  Water cleaning: After reflow, there is flux residue on the circuit board (substrate) to be cleaned. It is recommended to use deionized water as soon as possible after reflow to heat to the lowest temperature of 40~60℃ for cleaning. Spray pressures of 35 to 65psi are sufficient to remove all residues.

七、 健康与安全方面应注意事项 Health and safety considerations

注意！Note!

以下资料仅提供给使用者作参考，用户在使用前应了解清楚。详细内容请查阅本品物料安全数据表（MSDS）。

The following information is provided for users' reference only. Users should know clearly before using it.For details, please refer to the material safety data sheet (MSDS) of this product.

本制品不含受管制的特定化学物质，也不含有机溶剂中毒预防规则中所规制的有机溶剂，但仍需作必要的防范措施，以确保人体健康及安全。

This product does not contain specific chemical substances that are regulated, nor does it contain organic solvents that are regulated in the Organic Solvent Toxicity Prevention Regulations. However, necessary precautions must be taken to ensure human health and safety. For products containing lead, the operation should be carried out in accordance with the Labor Safety and Health Act and lead poisoning prevention rules.

i. 助焊剂是一种化学产品，混合了多种化学成份，应切记避免近距离嗅闻其气味，更不可食用。

Solder Flux is a chemical product that is mixed with a variety of chemical ingredients. should remember to avoid close smell of its smell, not to be edible.

ii. 在焊接固化过程中，助焊剂中产生的部分烟雾会对人体的呼吸系统产生刺激，长时间或一再暴露在其废气中可能会产生不适，因此应确保作业现场通风良好，焊接设备必须安装充足的排气装置，将废气排走。

In the welding process, part of the smoke generated by the solder flux will stimulate the respiratory system of the human body, which may cause discomfort if exposed to the exhaust gas for a long time or repeatedly. Therefore, it is necessary to ensure good ventilation in the operation site.

iii. 应有必要的防范措施避免助焊剂接触皮肤和眼睛。若不慎接触到皮肤，则应立即用沾有酒精的布将该处擦干净，再用肥皂和清水彻底清洗干净。若不慎让助焊剂接触眼睛，则需立即用清水冲洗 10 分钟以上，并尽快送医院医治。

Necessary precautions should be taken to prevent the solder flux from touching the skin and eyes. In case of contact with the skin inadvertently, the place should be immediately cleaned with an alcoholic cloth, and then thoroughly cleaned with soap and water. If the solder flux contact the eyes carelessly, it shall be immediately washed with water for more than 10 minutes and sent to the hospital as soon as possible.

iv. 作业过程中不允许饮食、抽烟，作业后须先用肥皂或温水洗手后才能进食。

No eating or smoking is allowed in the course of homework. After homework, you must wash your hands with soap or warm water before eating.

v. 虽然本品之溶剂系统闪点较高，但仍然易燃，应避免接近火源。若不慎着火，可用二氧化碳或化学干粉、泡沫灭火器进行灭火，不可用水灭火。

Although the solvent system of this product has a very high flash point, it is still flammable and should be avoided. If you accidentally catch fire, use carbon dioxide or chemical dry powder fire extinguisher to extinguish the fire. Do not use water to extinguish the fire.

vi. 废弃的助焊剂和清理后沾有助焊剂污渍的清洁布不能随意掉弃，应将其装入封密容器中，并按国家和地方的相关法规处置。

The waste solder flux and the cleaning cloth with solder flux stains after cleaning shall not be discarded at will. It shall be put into a sealed container and disposed of in accordance with relevant national and local regulations.